the opposing villi, blood-pressure is maintained and hemorrhage from the sinuses prevented. If from any cause the coaptation of the villi and the uterine wall becomes impaired, then the maternal vessels may rupture and hemorrhage result. Atony of the uterus is a not infrequent condition in many ill-nourished and debilitated patients in whom hemorrhage during early pregnancy is not infrequently observed.

OPHTHALMOLOGY.

UNDER THE CHARGE OF

EDWARD JACKSON, A.M., M.D.,
OF DENVER,

AND

T. B. SCHNEIDEMAN, A.M., M.D.,
PROFESSOR OF DISEASES OF THE EYE IN THE PHILADELPHIA POLYCLINIC.

The Pupil in General Disease.—Jack, Boston (*Boston Medical and Surgical Journal*, September 26, 1901), gives a summary of the pupillary phenomena in general disease.

The afferent path of the reflex arc for light reaction is the optic nerve and tract branching by some path to the pupil-contracting centre in the floor of the third ventricle, whence the third nerve to the iris is the efferent path. The associated contraction to convergence and accommodation is brought about by the same centre near which are situated those for convergence and accommodation. The active dilating centre is the cilio-spinal in the lower cervical cord. The normal moderate dilatation is dependent upon the constant psychical and sensitive stimuli transmitted through the sympathetic to the iris—the sympathetic reflex. The eyes should be tested one at a time for the light reflex, the other being covered. The patient should look at a distance so as to avoid bringing in the associated contraction for convergence and accommodation. So long as perception of light remains the reflex will take place, but the reverse is not true—*i. e.*, the vision may be good and no contraction of the pupil occur, as in paralysis of the sphincter, for example, by a mydriatic. The pupil of the second eye will also react to light thrown upon its fellow because of the nervous connection between the two sides. A blind eye will not react to light thrown on its own retina, nor will the second eye, but both will react perfectly if light be thrown on the other sound eye. There is a rare exception to the rule that pupils of blind eyes will not react—that is, when a lesion is high up in the optic tract, as in uræmia. Local diseases of the eye and drugs internally or locally may cause anomalies in the reactions and shape of the pupil, and these must be excluded in studying the effect of general disease. Dilatation may be paralytic (third nerve) or irritative (sympathetic); so likewise contraction may be paralytic (sympathetic) or irritative (third nerve). Paralytic mydriasis is seen in progressive paralysis (myosis at first) and in various disease processes at the base of the brain affecting the third nerve or its nucleus. Irritative mydriasis occurs in spinal meningitis of the cervical portion of the cord, in the spinal irritation of anæmic or chlorotic patients, after severe illness, as a premonitory sign of tabes, from intestinal worms; psychical excitement—acute mania, melancholia—in general paralysis, oftener then in one eye only with myosis in the other. Unilateral mydriasis occurring at short intervals, first in one eye and then in the other, is, according to von Graefe, a premonitory sign of mental derangement. Unequal pupils are said to be always pathological, but there are rare exceptions. They are said to occur in hysteria. Irritation myosis occurs in the early stages of inflammatory affections of the brain and meninges; later there is dilatation in the stage of depression. Paralytic myosis occurs in spinal lesions above the dorsal vertebræ—tabes, injuries, inflammations, etc. In acute mania, if myosis comes on, general paralysis may be prognosticated.

In the Argyll-Robertson pupil—reaction to accommodation, but not to light—the reflex arc is broken somewhere probably between the point where the optic fibres leave the tract and the nucleus of the third nerve. This is a frequent and early symptom in tabes; the pupils are usually, but not always, very small. The reaction to convergence is lost later. The same phenomenon is present in general paralysis, but less frequently, and usually later. In this disease pupillary symptoms are frequent and early, beginning usually as an inequality, the same being present in other forms of insanity. The Argyll-Robertson pupil always means the existence or approach of serious nervous disease.

Wernicke's symptom—light reflex preserved when light is thrown on the blind half of an hemianopic eye—is present if the lesion be above the reflex arc in the brain. Exceptionally the pupil may react when the lesion is in the arc, the special fibres for the reflex being perhaps more resistant than the ordinary fibres.

The paradoxical pupil symptom is the slight oscillation—hippus—which rapidly goes on to dilatation instead of contraction—considered an early sign of coming paralysis, also reported in hysteria and disseminated sclerosis. In the algid stage of cholera, if the light reflex is present the prognosis is good; if absent, bad. In epilepsy there is usually contraction first and dilatation later, the light reflex being lost—an important point in distinguishing the attack from hysteria. The writer, however, asserts that he has observed dilated and irresponsive pupils in hysteria. Both bilateral and unilateral mydriasis has been noticed in diabetes.

For diagnosis of the situation and nature of intracranial lesions the pupillary symptoms, if alone present, are of but little significance. If other branches or nerves are involved the importance may become considerable, especially considering the early period at which some pupillary changes occur.

Depression of the Lens in Cataract.—Mr. Power, London (*British Medical Journal*, October 26, 1901), makes a plea for the occasional performance of this operation. After referring to the fair measure of success obtained by native itinerants in India, who practice the operation with a